NORTH DAKOTA SUMMARY OF FY 2022
UIC CLASS II WORK EVENTS

The North Dakota Industrial Commission, Department of Mineral Resources, Oil and Gas Division (Division) continues to operate the Class II UIC Program without a significant non-compliance. The effectiveness of the program is the continued field presence and dedication of our 16 field inspectors and 11 field inspection technicians. Operators in North Dakota disposed of 567,580,035 barrels of saltwater and injected 98,462,335 barrels of saltwater and 17,619,925 MCF of gas for enhanced oil recovery, during FY2022.

The Division continued to conduct routine site inspections, witness nearly all mechanical integrity tests, witness nearly all plug and abandonments of all well types, permit disposal and injection wells, input data into our computer system, and conduct office administration. The strong field presence and witnessing of nearly all mechanical integrity tests and plug and abandonments helps ensure a timely response to fixing well failures and ensuring that all wells are properly plugged. The strong field presence also encourages compliance by the regulated community. There were no difficulties experienced in implementing our UIC workplan.

The Division continues to utilize its Risk Based Data Management System (RBDMS) computer database. It utilizes SQL 2008 as its backend and Access 2003 for the frontend. Part of our RBDMS database includes a laptop field inspection module. The Division continues to make numerous improvements to the database and frontend that allow us to more effectively and efficiently administer the UIC program, as well as the overall oil and gas regulatory program. This is possible because the Division has proficient programmers on staff. North Dakota's UIC program is strengthened by the utilization of RBDMS because it has brought consistency to the program, brought all of the various information collected into an electronic format in one database, and put information at the fingertips of the field inspectors as well as office personnel. This allows the Division to more easily and effectively monitor wells, track potential problems, and improve efficiencies for the Division as well as the regulated community. RBDMS also facilitates the Division in auditing various operator submittals to ensure the quality of the data submitted. The Division is in the process of implementing an RBDMS upgrade to become web-enabled. Release 1 consisted of Entity and Bond and went live in September 2019. Release 2 consisted of Entity Transfer, Well Management, Well Stimulation, Production Reporting, and UIC Volume Reporting and went live in January 2020. Release 3 consisted of Field Inspection, Facilities, Dockets and Hearings, Compliance, and Incidents and went live in July 2021. The Division anticipates release of a self-developed Geology Module in October 2022 and is actively pursuing a maintenance and operation project to migrate all functionality from its Classic RBDMS to the web-enabled RBDMS.

The Division maintains its headquarters in Bismarck and has three district offices, one in Dickinson, one in Williston, and one in Minot. At fiscal year-end, the Dickinson District Office had six field inspectors, three field inspection technicians, one pipeline technician, and one seismic inspector; three field inspection technicians were hired and two resigned shortly thereafter and two field inspectors were hired. At fiscal year-end, the Minot District Office had five field inspectors, five field inspection technicians, and

two pipeline technicians; one field inspector retired, one field inspector was hired, one field inspection technician was hired, and one field inspection technician was hired and fired. At fiscal year-end, the Williston District Office had five field inspectors, three field inspection technicians, and one pipeline technician; one field inspector and one pipeline technician resigned, and one field inspection technician was hired. For FY2023, the Division hopes to hire five additional field staff.

The Division began implementing an underground gathering pipeline program in FY2015. The program consists of a Pipeline Program Supervisor, Tamara Madche located in the Bismarck Office, and six pipeline technicians, two each in the Dickinson, Minot (one vacant), and Williston (one vacant) District offices. The Pipeline Program insects and monitors the installation of underground gathering pipelines, and their repair. New pipeline rules became effective January 1, 2017.

The field inspectors, field inspection technicians, and pipeline technicians communicate with the Bismarck office through cellular phones and through database replication. The field inspectors and field inspection technicians can access their email account and internet if they are in an area that has wireless internet capability, or through their cellular phone. The Division's field inspectors and field inspection technicians inspect all aspects of the oil and gas industry regulated by the Division and spend approximately twenty-five percent of their time on average on UIC matters.

Mark Bohrer has been in the UIC Manager position since July 1, 1999; Ashleigh Day has been in the UIC Supervisor position since October 1, 2015; and Brandi Schafer has been in the UIC Permit Technician position since July 1, 2021.

The Division issued 25 SWD permits, 56 EOR permits, and no area permits for EOR in FY2022. The average time to issue a SWD permit was 165 days (89 days in house) and 92 days (90 days in house) for an EOR permit. The Division anticipates these permit times will decrease with the implementation of our database upgrade. These EOR permit times are inflated due to operators not submitting information in a timely manner. The Division does not charge a UIC permit fee. All UIC wells are covered by blanket or individual well bonds.

The Division held 36 public UIC hearings, 29 for SWD, 0 for EOR, and 7 for pilot EOR projects in FY2022. At the end of FY2022, we had 605 SWD wells, 44 SWD permits, 2 AGD wells, 713 EOR wells, and 26 EOR permits. The Division's goal is to inspect every well monthly. Violations are initially communicated to the operator verbally. If warranted, a letter will be written and placed in the well file. In extreme circumstances, a complaint may be issued.

The Division awarded bids and plugged 281 wells through December 30, 2020, of which 41 were UIC wells; reclaimed 181 well sites, a treating plant, and a saltwater disposal pipeline gathering system through December 30, 2020, of which 34 were UIC well sites, utilizing $66,350,000 in CARES Act funds. The Division awarded bids and plugged an additional 53 wells during FY2021 through use of its Abandoned Oil and Gas Well Plugging and Site Restoration Fund, of which 4 were UIC wells.

With its aggressive program to evaluate and eliminate orphan wells, the Division has identified 22 orphan UIC wells at the end of FY2022 that will be plugged and reclaimed with the anticipated $25,000,000 Infrastructure Investment and Jobs Act funds.

The Division maintains all of our well logs available to the public as .TIF files via our website. We also have all open hole logs that can be submitted as .LAS files, since September 2000, available on our website.

The Division continues to accept electronic submissions of injection reports. The Division has implemented electronic reporting via webforms for production and UIC data and XML data submittals for production. The Division, through funding from the Ground Water Protection Council, completed installation of a batch XML production and UIC data submittal utility in August 2007. The Division completed an interface (forms, edit checks, and reports) to transfer the batch XML production data into RBDMS and the utility was made available to operators in September 2008. The Division received the first batch XML data submittal for oil and gas production for the reporting month of November 2008. The Division completed an interface (forms, edit checks, and reports) to transfer the batch XML UIC data into RBDMS and the first batch XML data submittal for UIC was received March, 2010. The Division also completed an Adobe PDF project to allow operators to submit UIC data via interactive Adobe PDF forms and made it available to operators in March 2008. These Adobe PDF forms appear identical to the paper form operators have been utilizing but the data entered and submitted is then automatically transferred to our database after a final review. The Division received the first UIC data via interactive Adobe PDF forms for the reporting month of March 2009. The Division has been receiving oil and gas production via interactive Adobe PDF forms since the reporting month of January 2006.

The FY2022 USEPA Grant Agreement was not awarded until August 2, 2022. The Division continued to implement the UIC program without a reduction in the level of commitment.

The 2009 legislature enacted legislation granting the Industrial Commission authority to regulate carbon dioxide sequestration. Proposed rules were published in September 2009 for a public hearing on October 15, 2009. The effective date was April 1, 2010. The EPA issued federal rules for Class VI wells for carbon dioxide sequestration on December 10, 2010. The Department of Mineral Resources hired a Carbon Capture and Storage Supervisor in July 2011 to administer North Dakota's Class VI program. Pursuant to the promulgation of the EPA Class VI rules, the Division decided to amend its rules to meet federal stringency requirements and a public hearing was held on April 24, 2012. These rules did not become effective and on a recommendation from the Attorney General's office, we again amended the rules and another public hearing was held on October 22, 2012. The rules became effective April 1, 2013 and the Division submitted a primacy application to EPA Headquarters and EPA Region VIII on June 21, 2013. The EPA Administrator signed the primacy agreement on May 8, 2017 and the approval was subject to a 60-day comment period which closed on July 18, 2017. The EPA granted primacy to North Dakota for the Class VI program effective April 24, 2018. Stephen Fried is the Carbon Capture and Storage Supervisor.

Division staff has continued frequent meetings with prospective operators of both private and commercial carbon dioxide sequestration projects to provide guidance on compiling a carbon dioxide storage facility permit. A storage facility permit includes delineation and characterization of the storage reservoir, and must be obtained before Class VI well permits will be issued to inject carbon dioxide. A storage facility permit was issued on October 19, 2021 to Red Trail Energy, LLC for the Red Trail Richardton Ethanol Broom Creek Storage Facility #1 near Richardton for an ethanol plant and the first-in-the-nation state-primacy approved Class VI well began injection on June 17, 2022. Red Trail anticipates it will inject 180,000 metric tons annually. A storage facility permit was issued on January 21, 2022 to Minnkota Power Cooperative, Inc. for the Minnkota Center MRYS Deadwood Storage Facility #1 near Center for its coal-fired power plant. Minnkota anticipates it will inject up to 1,170,000 metric tons annually although a Class VI well permit has not been issued. A storage facility permit was issued on January 21, 2022 to Minnkota Power Cooperative, Inc. for the Minnkota Center MRYS Broom Creek Storage Facility #1 near Center for its coal-fired power plant. Minnkota anticipates it will inject up to 4,000,000 metric tons annually although a Class VI well permit has not been issued. A public hearing was held on July 20, 2022 for Dakota Gasification Company to obtain a storage facility permit to store approximately 2,700,000 metric tons of carbon dioxide annually in the Broom Creek Formation from its Great Plains Synfuels Plant; this storage facility permit is expected to be issued in January 2023. One additional ethanol plant near Underwood has completed its site characterization and it is anticipated a carbon dioxide storage facility permit application will be filed in October 2023 for up to 200,000 metric tons annually. Another ethanol plant near Spirit Wood is investigating carbon dioxide storage for up to 200,000 metric tons annually. A commercial ethanol storage facility near Beulah is undergoing site characterization to store between 12,000,000 and 20,000,000 metric tons annually. One additional coal-fired power plant near Underwood is investigating carbon dioxide storage for up to 9,000,000 metric tons annually. Target reservoirs remain the Inyan Kara, Broom Creek, and Deadwood Formations. The Inyan Kara Formation consists of channel sands; the Broom Creek Formation consists of eolian sand dunes with tight carbonate infill; and the Deadwood Formation sands are not a frequent drilling target. There is possible interest in the Interlake Formation and Red River Formation in the very eastern parts of the basin. These two formations are limestones and dolostones that are not mineral bearing in the potential areas of interest. At the end of FY2022, North Dakota has one Class VI carbon dioxide injection well, one carbon dioxide observation well, and ten wells drilled as stratigraphic tests but constructed to Class VI standards. The Division anticipates applications for two storage facility permits and associated Class VI wells during 2023.

The FY2022 annual EPA Region VIII UIC State Directors Meeting was held in Williston, ND August 30 through September 1, hosted by Fort Peck Tribes Office of Environmental Protection and EPA. The Division feels this annual meeting is invaluable, allowing the opportunity to interact with EPA and other state regulatory personnel.

North Dakota has had unprecedented activity levels due to development of the Bakken and Three Forks Formation as part of the "Bakken Play" although activity decreased in FY2020 and into FY2021 due to the oil price collapse and the COVID-19 pandemic. Activity at the end of FY2022 was back to pre-pandemic levels. North

Dakota's oil production and well count has risen from approximately 98,509 barrels of oil per day and 3,923 wells in January 2006 to approximately 1,519,037 barrels of oil per day and 16,110 wells in November 2019. Oil production in September 2022 was approximately 1,121,063 barrels of oil per day from 17,769 wells. North Dakota rose from the ninth to the second largest oil producing state and is now the third largest oil producing state in the nation.